

NOTES ON SPECIES OF MIRIDÆ INHABITING ASH  
TREES (FRAXINUS) WITH THE DESCRIPTION  
OF A NEW SPECIES (HEMIP.).\*

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The writer has been gathering data on the life history and habits of Miridæ during the past three seasons and finds that the species breeding on ash trees are of particular interest. All the species of *Neoborus*, *Xenoborus* and *Tropidosteptes* are confined to ash trees (*Fraxinus*) as far as can be determined. Data is here given on the occurrence of certain species in New York with notes on the food habits and relative abundance of the species.

**Tropidosteptes cardinalis** Uhler. This species was found breeding only on the white ash (*Fraxinus americana*) and occurring in greatest numbers on the tender and succulent growth. The writer also noticed that the adults soon leave the place where they were reared and scatter to other more favorable growth for depositing eggs.

*Records:* June 7 to June 16, Ithaca, N. Y.; June 27, Honeoye Falls, N. Y.; June 12 to June 25, Batavia, N. Y.; July 4-5, Four Mile, N. Y., collected by the writer. June 20, Pine Island, New York (Wm. T. Davis).

**Neoborus canadensis** Van Duzee. This species was found on *Fraxinus americana* in company with *T. cardinalis* and *N. tricolor* on the Cornell Campus. The life cycle coincides very closely with that of *T. cardinalis* but is found only in favored spots.

*Records:* May 31 to June 16, Ithaca, N. Y.; June 20 to Aug. 24, Batavia, N. Y.; June 27, Portage, N. Y., collected by the writer.

**Neoborus geminus** Say. Occurs on *Fraxinus americana* in company with *amænus* but found only during June and early July. In the large series collected by the writer certain speci-

\* Contribution from the Department of Entomology of Cornell University.

mens show a gradation into the dark forms of *amænus* and thus the two may prove to be but varieties of the same species.

*Records*: June 13 to June 28, Batavia, N. Y.; July 4-5, Four Mile, N. Y. (H. H. Knight).

***Neoborus amænus*** Reuter. Most abundant on *Fraxinus americana* and *F. pennsylvanica* and found sparingly on *F. nigra*. The species has two broods, the first adults maturing about June 20 in western New York and continuing on the trees up till frost or the middle of September.

*Record*: June 20 to Aug. 24, Batavia, N. Y.; Sept. 14, Wyoming, N. Y. (H. H. Knight).

***Neoborus palmeri*** Reuter. This form has been regarded as a variety of *amænus* but it is undoubtedly a good species. The writer has found it only on the black ash (*Fraxinus nigra*) and apparently coming earlier than *X. plagifer* and *X. commissuralis*.

*Records*: 5 ♀ July 30, 2 ♀ Aug. 6, Batavia, N. Y. (H. H. Knight).

***Neoborus pubescens*** new species. Very similar to certain dark forms of *amænus*, but distinguished from that and other species in the genus except *tricolor* by the presence of distinct pubescence.

Length 4.5-4.8 mm. Antennæ and legs pale. Head more sharply produced and the front more vertical and flattened than in *amænus*; black, in the female the tips of the loræ and juga, each side of the median line on the front, pale. Pronotum with sides distinctly carinate only on the apical half; black, top of the collar, rather widely on the median line of the disk, one and sometimes two rays behind each callus, pale yellow; more coarsely punctured than in *amænus*. Scutellum yellow, black at the middle of the base and on the mesoscutum; sternum and pleura black, orifice pale. Hemelytra pale, inner half of the clavus, along the claval suture, large apical spot on the corium and slightly invading the embolium, black. Membrane pale, in the female dark fuscous to black within the cells and margining the veins; in the male dark fuscous and extending to include the middle of the membrane. Venter black, sometimes paler in the female.

*Holotype*: ♂ July 23, Ithaca, New York (H. H. Knight); author's collection.

*Allotype*: taken with the type.

*Paratypes*: 3 ♀ July 23, 1 ♂ 31 ♀ July 26, Ithaca, N. Y.; 2 ♀ Aug. 1, Batavia, N. Y., collected by the writer. 2 ♂ 1 ♀ June 15, Woodworth Lake, Fulton County, N. Y. (C. P. Alexander). ♀ July 3, Hanover, New Hampshire (C. W. Johnson).

The species was found only on the very young white ash plants which grew in shady and damp places, the leaves of which appeared to be infested by a mite.

**Xenoborus pettiti** Reuter. Breeds on *Fraxinus americana* and found in company with *T. cardinalis* and *N. canadensis*:

*Records*: May 31 to June 16, Ithaca, N. Y.; June 13 to June 30, Batavia, N. Y.; June 22, Portage, N. Y. (H. H. Knight).

**Xenoborus neglectus** new species. Resembles certain pale forms of *pettiti*; left genital clasper much longer and more spatulate toward the tip.

♂. Length 5.4 mm., width 2.1 mm. Black with pale. Antennæ fuscous, paler on the basal half of the first segment. Head with lower half of the face fuscous, front pale and flecked with reddish; carina and a small median dash at the middle of the vertex blackish. Pronotum ecarinate, punctuation and pubescence nearly as in *pettiti*; collar and large median spot or ray on the disk, white or pale yellow; pale ray from behind the calli extending along the margin of the disk and widening to the basal angles; scutellum pale yellowish, mesoscutum blackish. Hemelytra blackish, embolium, basal angle of the corium and entire cuneus, clear; membrane fuscous, in the female paler in the middle. Legs pale yellowish, the hind femora indistinctly marked with fuscous at the apices.

*Holotype*: ♂, June 17-20, Mud Creek, Tompkins Co., N. Y.; Cornell University Collection.

*Allotype*: June 18, Batavia, N. Y. (H. H. Knight).

The writer has found this species rather scarce though systematic collecting during June may show that it is present in greater numbers. The writer ventures to guess that it will be found on the black ash when that plant is thoroughly worked in June.

**Xenoborus plagifer** Reuter. The writer collected in the vicinity of Batavia for three seasons before taking this and the following species. It breeds only on the black ash (*F. nigra*) which grows in dense swampy woods. Once having found the food plant a large series was obtained by sweeping the host plant.

*Records*: ♂ July 30, 2 ♂ Aug. 1, 39 ♂♀ Aug. 6, ♀ Aug. 9, 5 ♂♀ Aug. 10, 27 ♂♀ Aug. 12, Batavia, N. Y. (H. H. Knight).

**Xenoborus commissuralis** Reuter. This pretty species was found on *Fraxinus nigra* in company with *plagifer* and was taken in greater numbers.

*Records*: 14 ♂♀ July 29, 123 ♂♀ July 30, 40 ♂♀ Aug. 1, Batavia, N. Y. (H. H. Knight).